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25 MAR 2002

PATENT  
1155-0246P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: MURAKAMI, Hidetatsu et al.  
Int'l. Appl. No.: PCT/JP01/06376  
Appl. No.: New Group:  
Filed: March 25, 2002 Examiner:  
For: NOVEL ETHYLENE COPOLYMER AND USES  
THEREOF

PRELIMINARY AMENDMENT

**BOX PATENT APPLICATION**

Assistant Commissioner for Patents  
Washington, DC 20231

March 25, 2002

Sir:

The following Preliminary Amendments and Remarks are respectfully submitted in connection with the above-identified application.

AMENDMENTS

IN THE SPECIFICATION:

Please amend the specification as follows:

Before line 1, insert --This application is the national phase under 35 U.S.C. § 371 of PCT International Application No. PCT/JP01/06376 which has an International filing date of July 24, 2001, which designated the United States of America.--

IN THE CLAIMS:

Please amend the claims as follows:

8. (Amended) The ethylene copolymer as claimed in claim 1, wherein regio-regularity of the  $\alpha$ -olefin of 3 to 20 carbon atoms, as measured by  $^{13}\text{C}$ -NMR, satisfies the following expression (e-2):

$$T_{\beta\gamma} / (T_{\beta\gamma} + T_{\beta\beta}) \leq 0.30 - 0.0015x \quad (\text{e-2})$$

wherein  $T_{\beta\gamma}$  is a peak intensity of a carbon atom having branches at the  $\beta$ -position and the  $\gamma$ -position in the  $^{13}\text{C}$ -NMR spectrum,  $T_{\beta\beta}$  is a peak intensity of a carbon atom having branches at both of the  $\beta$ -positions, and  $x$  is an ethylene content (% by mol) in the polymer.

9. (Amended) The ethylene copolymer as claimed in claim 1, wherein the molecular weight distribution ( $M_w/M_n$ ), as measured by GPC, is in the range of 1.2 to 10.

10. (Amended) The ethylene copolymer as claimed in claim 1, wherein the molecular weight distribution ( $M_w/M_n$ ), as measured by GPC, is in the range of 1.6 to 10.

11. (Amended) The ethylene copolymer as claimed in claim 1, which satisfies the relational expression  $MI_{10}/MI_2 <$

(Mw/Mn)+5.55.

12. (Amended) The ethylene copolymer as claimed in claim 1, which satisfies the relational expression  $MI2 > 19.009 \times (\eta)^{-5.2486}$ .

13. (Amended) The ethylene copolymer as claimed in claim 1, wherein the ash content in the ethylene copolymer is not more than 1000 ppm.

14. (Amended) The ethylene copolymer as claimed in claim 1, wherein the titanium element content in the ethylene copolymer is not more than 10 ppm, and/or the zirconium element content in the ethylene copolymer is not more than 10 ppm.

15. (Amended) The ethylene copolymer as claimed in claim 1, which is a copolymer prepared without contact of the reaction solution with water and/or an alcohol in an amount of not less than 1/10 of the weight of the copolymer in a solution state or a semi-precipitation state.

16. (Amended) The ethylene copolymer as claimed in claim 1, which is a copolymer prepared by forming not less than 50 % of chain transfer by the addition of hydrogen.

17. (Amended) A molded product comprising the ethylene

copolymer of claim 1.

18. (Amended) A resin modifier comprising the ethylene copolymer of claim 1.

19. (Amended) A composition comprising the ethylene copolymer of claim 1 and another thermoplastic polymer.

REMARKS

The specification has been amended to provide a cross-reference to the previously filed International Application.

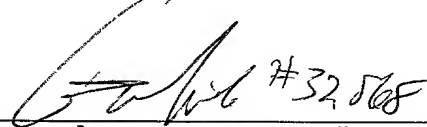
The claims have been amended to remove improper multiple dependencies.

Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly solicited.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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for Raymond C. Stewart, #21,066

RCS/rem  
1155-0246P

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Attachment: VERSION WITH MARKINGS TO SHOW CHANGES MADE

(Rev. 02/21/02)

VERSION WITH MARKINGS TO SHOW CHANGES MADE

The specification has been amended to provide a cross-reference to the previously filed International Application.

IN THE CLAIMS:

The claims have been amended as follows:

8. (Amended) The ethylene copolymer as claimed in [any one of claims 1 to 7] claim 1, wherein regio-regularity of the  $\alpha$ -olefin of 3 to 20 carbon atoms, as measured by  $^{13}\text{C}$ -NMR, satisfies the following expression (e-2):

$$T_{\beta\gamma}/(T_{\beta\gamma}+T_{\beta\beta}) \leq 0.30-0.0015x \quad (\text{e-2})$$

wherein  $T_{\beta\gamma}$  is a peak intensity of a carbon atom having branches at the  $\beta$ -position and the  $\gamma$ -position in the  $^{13}\text{C}$ -NMR spectrum,  $T_{\beta\beta}$  is a peak intensity of a carbon atom having branches at both of the  $\beta$ -positions, and  $x$  is an ethylene content (% by mol) in the polymer.

9. (Amended) The ethylene copolymer as claimed in [any one of claims 1 to 8] claim 1, wherein the molecular weight distribution ( $M_w/M_n$ ), as measured by GPC, is in the range of 1.2 to 10.

10. (Amended) The ethylene copolymer as claimed in [any one of claims 1 to 8] claim 1, wherein the molecular weight

distribution ( $M_w/M_n$ ), as measured by GPC, is in the range of 1.6 to 10.

11. (Amended) The ethylene copolymer as claimed in [any one of claims 1 to 10] claim 1, which satisfies the relational expression  $MI_{10}/MI_2 < (M_w/M_n) + 5.55$ .

12. (Amended) The ethylene copolymer as claimed in [any one of claims 1 to 11] claim 1, which satisfies the relational expression  $MI_2 > 19.009 \times (\eta)^{-5.2486}$ .

13. (Amended) The ethylene copolymer as claimed in [any one of claims 1 to 12] claim 1, wherein the ash content in the ethylene copolymer is not more than 1000 ppm.

14. (Amended) The ethylene copolymer as claimed in [any one of claims 1 to 13] claim 1, wherein the titanium element content in the ethylene copolymer is not more than 10 ppm, and/or the zirconium element content in the ethylene copolymer is not more than 10 ppm.

15. (Amended) The ethylene copolymer as claimed in [any one of claims 1 to 14] claim 1, which is a copolymer prepared without contact of the reaction solution with water and/or an alcohol in an amount of not less than 1/10 of the weight of the copolymer in a solution state or a semi-precipitation state.

16. (Amended) The ethylene copolymer as claimed in [any one of claims 1 to 15] claim 1, which is a copolymer prepared by forming not less than 50 % of chain transfer by the addition of hydrogen.

17. (Amended) A molded product comprising the ethylene copolymer of [any one of claims 1 to 16] claim 1.

18. (Amended) A resin modifier comprising the ethylene copolymer of [any one of claims 1 to 16] claim 1.

19. (Amended) A composition comprising the ethylene copolymer of [any one of claims 1 to 16] claim 1 and another thermoplastic polymer.